

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:  FUNKE <i>et al.</i>  Appl. No.: 10/579,074  371(c) Date: May 21, 2007  For: <b>Active Compound Combinations Having Insecticidal Properties</b>	Confirmation No.: 3350  Art Unit: 4121  Examiner: Pihonak, Sarah  Atty. Docket: 2400.0380000/JMC/CMB/AKN
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**Declaration of Wolfram Andersch under 37 C.F.R. §1.132**

*Mail Stop Amendment*

Commissioner for Patents  
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Alexandria, VA 22313-1450

I, Wolfram Andersch of 51469 Bergisch Gladbach, Schlodderdicher Weg 77, a citizen of Germany, hereby declare:

1. that I received the doctor's degree in biology from the University of Göttingen, Germany, in 1983;
2. that I am now an employee of Bayer CropScience AG<sup>1</sup> in Germany as a biologist;
3. that I have specialized in the field of plant protection; and
4. that the following tests have been carried out under my supervision and control.

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<sup>1</sup> Bayer CropScience AG is the assignee of the above-captioned application.

5. The expected efficacy of a given combination of two compounds is calculated according to the formula presented in Colby, S.R., "Calculating Synergistic and Antagonistic Responses of Herbicide Combinations," *Weeds* 15:20-22 (1967) as follows:

If

- X is the efficacy expressed in % mortality of the untreated control for test compound A at a concentration of m,
- Y is the efficacy expressed in % mortality of the untreated control for test compound B at a concentration of n,
- E is the efficacy expressed in % mortality of the untreated control using the mixture of A and B at concentrations of m and n, respectively,

$$E = X + Y - \frac{X \cdot Y}{100}$$

6. If the observed insecticidal efficacy of the combination is higher than "E," then the combination of the two compounds is more than additive, *i.e.*, there is a synergistic effect.

Example A

**Myzus persicae - test (spray application)**

Solvent:            78    parts by weight of acetone  
                      1.5    parts by weight of dimethylformamide

Emulsifier:        0.5    parts by weight of alkylaryl polyglykolether

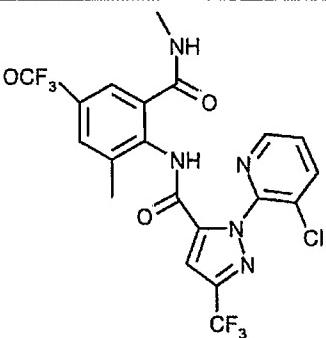
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) which are heavily infested by the green peach aphid (*Myzus persicae*) are treated by being sprayed with the preparation of the active compound at the desired concentration.

After the specified period of time, the mortality in % is determined. A mortality of 100% means that all the aphids have been killed; a mortality of 0% means that none of the aphids have been killed.

According to the results presented in Tables A1-A4, the following combinations show a synergistic effect in comparison to the single compounds:

Table A1: *Myzus persicae* - Test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 1 day</u>
	0.0064	0
(IIk)Thiacloprid	0.16	0

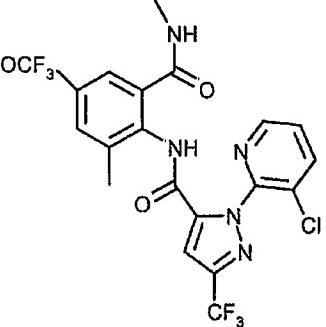
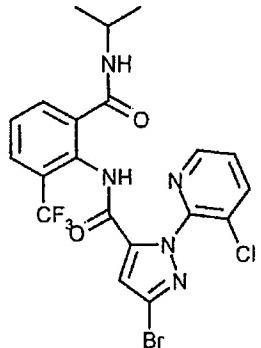
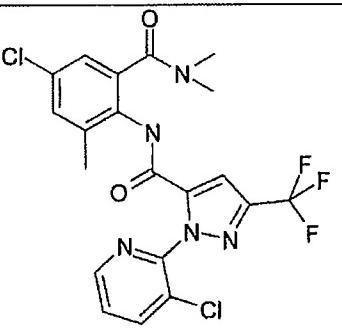
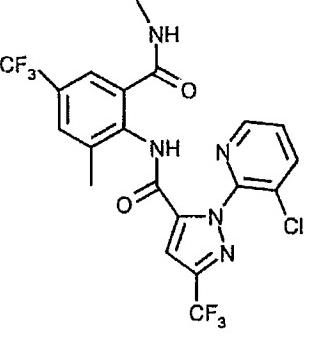
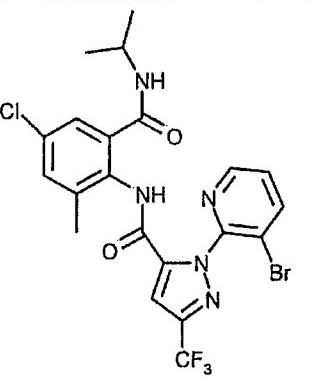
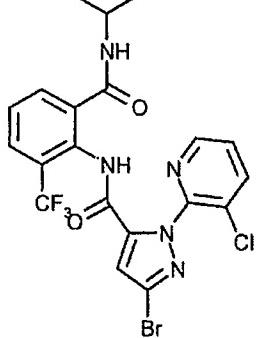
 + (Ik)Thiacloprid (1 : 25) according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <b>50</b>	<u>cal.**</u> <b>0</b>
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Table A2: *Myzus persicae* – Test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 6 days</u>
	0.0064	0
	0.0064	0

	0.0064	0
<b>II-1-2</b>	0.0064	0
	0.0064	0
<b>(Ik)Thiacloprid</b>	0.16	0
 + (Ik)Thiacloprid (1 : 25) according to the invention	$0.0064 + 0.16$	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>0</u>

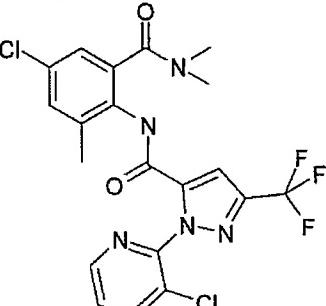
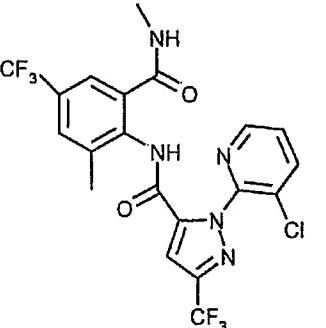
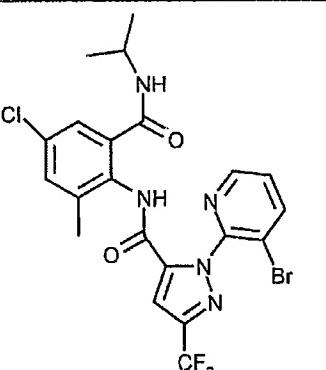
 + (Ik)Thiacloprid (1 : 25) according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <b>20</b>	<u>cal.**</u> <b>0</b>
 + (Ik)Thiacloprid (1 : 25) according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <b>40</b>	<u>cal.**</u> <b>0</b>
<b>II-1-2 + (Ik)Thiacloprid (1 : 25)</b> according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <b>60</b>	<u>cal.**</u> <b>0</b>
 + (Ik)Thiacloprid (1 : 25) according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <b>30</b>	<u>cal.**</u> <b>0</b>

Table A3: *Myzus persicae* - Test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 1 day</u>
II-1-9	0.8	0

II-1-54	0.16 0.032 0.0064	0 0 0
II-1-52	0.8 0.16	0 0
II-1-1	0.8 0.032	0 0
II-1-12	0.8 0.16 0.032	0 0 0
II-1-4	0.8 0.16 0.032	0 0 0
(Im) Clothianidin	4 0.08	80 30
II-1-54 + (Im) Clothianidin (1 : 25) according to the invention	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>95</u> <u>80</u>
II-1-52 + (Im) Clothianidin (1 : 25) according to the invention	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>95</u> <u>80</u>
II-1-52 + (Im) Clothianidin (10 : 1) according to the invention	<b>0.8 + 0.08</b>	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>30</u>
II-1-12 + (Im) Clothianidin (1 : 25) according to the invention	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>95</u> <u>80</u>
II-1-4 + (Im) Clothianidin (1 : 25) according to the invention	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>90</u> <u>80</u>
(Ia) Imidacloprid	0.8 0.16 0.08	80 20 20
II-1-9 + (Ia) Imidacloprid (1 : 1) according to the invention	<b>0.8 + 0.8</b>	<u>obs.*</u> <u>cal.**</u> <u>90</u> <u>80</u>
II-1-54 + (Ia) Imidacloprid (1 : 25) according to the invention	<b>0.0064 + 0.16</b>	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>20</u>
II-1-52 + (Ia) Imidacloprid (10 : 1) according to the invention	<b>0.8 + 0.08</b>	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>20</u>
II-1-1 + (Ia) Imidacloprid (10 : 1) according to the invention	<b>0.8 + 0.08</b>	<u>obs.*</u> <u>cal.**</u> <u>40</u> <u>20</u>
II-1-12 + (Ia) Imidacloprid (10 : 1) according to the invention	<b>0.8 + 0.08</b>	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>20</u>
II-1-4 + (Ia) Imidacloprid (10 : 1) according to the invention	<b>0.8 + 0.08</b>	<u>obs.*</u> <u>cal.**</u> <u>60</u> <u>20</u>

(Ik)Thiacloprid	0.8	50
II-1-54 + (Ik)Thiacloprid (1 : 25) according to the invention	0.032 + 0.8	<u>obs.*</u> <u>cal.**</u> 70                50
II-1-1 + (Ik) Thiacloprid (1 : 25) according to the invention	0.032 + 0.8	<u>obs.*</u> <u>cal.**</u> 80                50
II-1-12 + (Ik) Thiacloprid (1 : 25) according to the invention	0.032 + 0.8	<u>obs.*</u> <u>cal.**</u> 90                50
II-1-4 + (Ik)(Thiacloprid (1 : 25) according to the invention	0.032 + 0.8	<u>obs.*</u> <u>cal.**</u> 95                50

Table A4: *Myzus persicae* – Test

<u>Active Ingredient</u>	<u>Concentration in grams per hectare</u>	<u>Mortality in % after 6 days</u>
II-1-9	4 0.8	25 0
II-1-54	0.8	0
II-1-52	0.8 0.0064	0 0
II-1-1	0.8	0
II-1-24	0.8	0
II-1-12	0.8	50
II-1-4	0.8 0.0064	0 0
(Im) Clothianidin	0.8 0.08	30 30
II-1-9 + (Im) Clothiandin (1 : 1) according to the invention	0.8 + 0.8	<u>obs.*</u> <u>cal.**</u> 55                30
II-1-54 + (Im) Clothiandin (10 : 1) according to the invention	0.8 + 0.08	<u>obs.*</u> <u>cal.**</u> 50                30
II-1-52 + (Im) Clothiandin (10 : 1) according to the invention	0.8 + 0.08	<u>obs.*</u> <u>cal.**</u> 50                30
II-1-1 + (Im) Clothiandin (10 : 1) according to the invention	0.8 + 0.08	<u>obs.*</u> <u>cal.**</u> 60                30
II-1-24 + (Im) Clothiandin (10 : 1) according to the invention	0.8 + 0.08	<u>obs.*</u> <u>cal.**</u> 50                30

(Ia) Imidacloprid	0.16 0.08	70 30
II-1-52 + (Ia) Imidacloprid (1 : 25) according to the invention	<u>0.0064 + 0.16</u>	<u>obs.*</u> <u>cal.**</u> <u>90</u> <u>70</u>
II-1-4 + (Ia) Imidacloprid (1 : 25) according to the invention	<u>0.0064 + 0.16</u>	<u>obs.*</u> <u>cal.**</u> <u>80</u> <u>70</u>
II-1-4 + (Ia) Imidacloprid (10 : 1) according to the invention	<u>0.8 + 0.08</u>	<u>obs.*</u> <u>cal.**</u> <u>60</u> <u>30</u>
(Ik) Thiacloprid	4 0.08	90 0
II-1-9 + (Ik) Thiacloprid (1 : 1) according to the invention	4 + 4	<u>obs.*</u> <u>cal.**</u> <u>98</u> <u>92.5</u>
II-1-52 + (Ik) Thiacloprid (10 : 1) according to the invention	<u>0.8 + 0.08</u>	<u>obs.*</u> <u>cal.**</u> <u>80</u> <u>0</u>
II-1-1 + (Ik) Thiacloprid (10 : 1) according to the invention	<u>0.8 + 0.08</u>	<u>obs.*</u> <u>cal.**</u> <u>30</u> <u>0</u>
II-1-12 + (Ik) Thiacloprid (10 : 1) according to the invention	<u>0.8 + 0.08</u>	<u>obs.*</u> <u>cal.**</u> <u>70</u> <u>50</u>

\* obs. = observed insecticidal efficacy

\*\* cal. = efficacy calculated with Colby-formula

Example B

**Phaedon cochleariae - test (spray application)**

Solvent:      78      parts by weight of acetone  
                1.5      parts by weight of dimethylformamide

Emulsifier:    0.5    parts by weight of alkylaryl polyglykolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the mustard beetle (*Phaedon cochleariae*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. A mortality of 100% means that all the beetle larvae have been killed; a mortality of 0% means that none of the beetle larvae have been killed.

According to the results presented in Tables B1-B3, the following combinations show a synergistic effect in comparison to the single compounds:

Table B1: *Phaedon cochleariae* larvae – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per</u> <u>hectare</u>	<u>Mortality</u> <u>in % after 2 days</u>
	4	0

	4	50
<b>II-1-2</b>	0.8	0
	0.8	33
<b>(Ia) Imidacloprid</b>	100	50
	20	17
<b>(Ik) Thiacloprid</b>	20	17
	4 + 100	<u>obs.*</u> <u>cal.**</u> <u>67</u> <u>50</u>
+ <b>(Ia) Imidacloprid</b> (1 : 25) according to the invention		

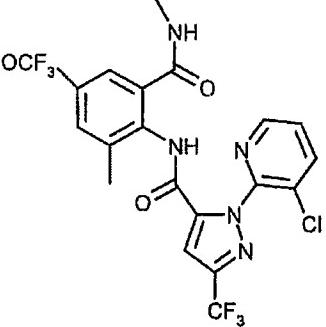
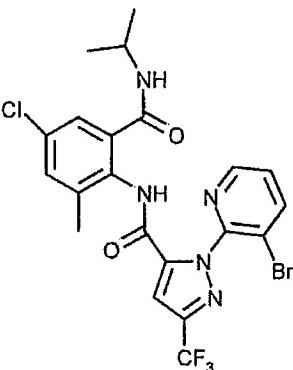
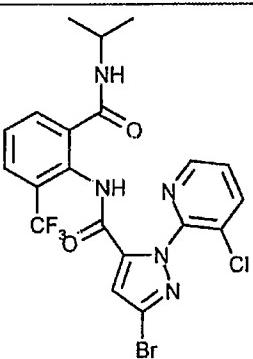
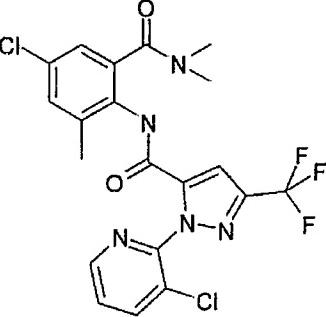
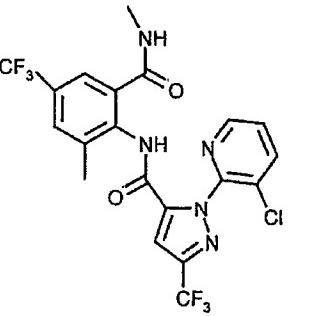
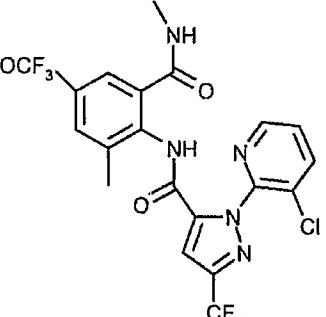
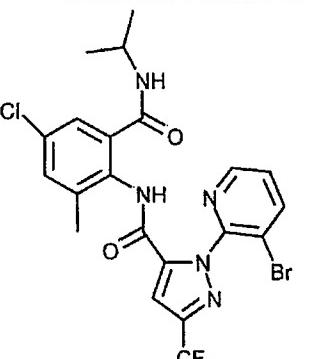
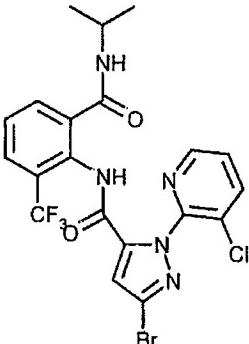
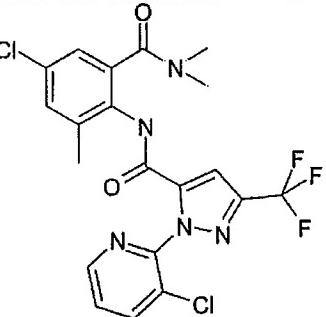
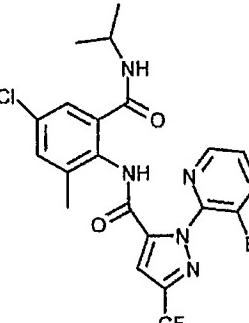
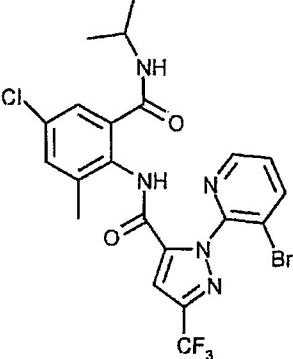
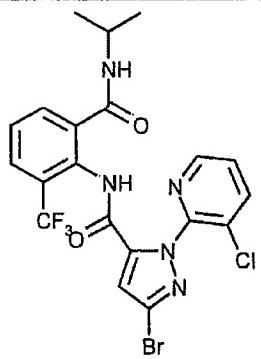
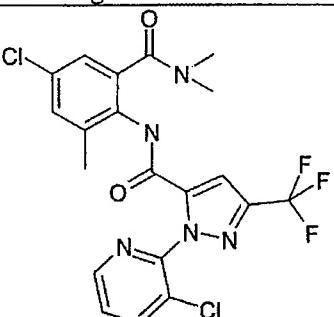
 + (Ia) Imidacloprid (1 : 25) according to the invention	<b>4 + 100</b>	<u>obs.*</u> <b>83</b>	<u>cal.**</u> <b>75</b>
<b>II-1-2 + (Ia) Imidacloprid (1 : 25)</b> according to the invention	<b>0.8 + 20</b>	<u>obs.*</u> <b>100</b>	<u>cal.**</u> <b>17</b>
 + (Ik)Thiacloprid (1 : 25) according to the invention	<b>0.8 + 20</b>	<u>obs.*</u> <b>67</b>	<u>cal.**</u> <b>44.39</b>

Table B2: *Phaedon cochleariae* larvae – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 6 days</u>
	0.8	0

	0.8	0
	0.16	33
	0.16	0
<b>II-1-2</b>	0.16	0
	0.8 0.16	33 0
<b>(Im) Clothianidin</b>	20 4	67 33

(Ia) Imidacloprid	4	0
(Ik) Thiacloprid	20 4	50 0
	0.8 + 20	<u>obs.*</u> <u>cal.**</u> 100 67
+ (Im) Clothianidin (1 : 25) according to the invention		
	0.8 + 20	<u>obs.*</u> <u>cal.**</u> 100 67
+ (Im) Clothianidin (1 : 25) according to the invention		
II-1-2 + (Im) Clothianidin (1 : 25) according to the invention	0.16 + 4	<u>obs.*</u> <u>cal.**</u> 50 33
	0.8 + 20	<u>obs.*</u> <u>cal.**</u> 100 77.89
+ (Im) Clothianidin (1 : 25) according to the invention		

 + (Ia) Imidacloprid (1 : 25) according to the invention	0.16 + 4	<u>obs.*</u> <b>17</b>	<u>cal.**</u> <b>0</b>
 + (IIk) Thiacloprid (1 : 25) according to the invention	0.8 + 20	<u>obs.*</u> <b>67</b>	<u>cal.**</u> <b>50</b>
 + (IIk) Thiacloprid (1 : 25) according to the invention	0.8 + 20	<u>obs.*</u> <b>67</b>	<u>cal.**</u> <b>50</b>

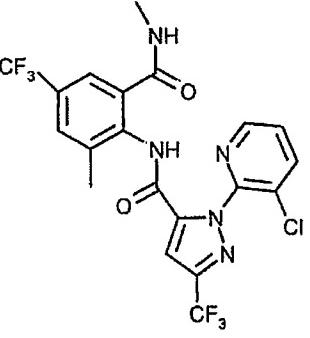
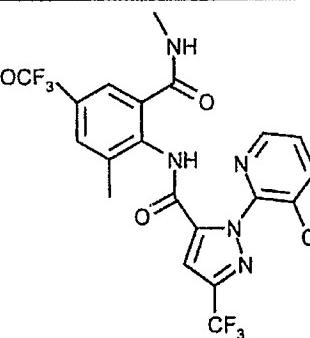
		<u>obs.*</u>	<u>cal.**</u>
 + (Ik)Thiacloprid (1 : 25) according to the invention	0.16 + 4	50	33
 + (Ik)Thiacloprid (1 : 25) according to the invention	0.16 + 4	50	0

Table B3: *Phaedon cochleariae* larvae – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per</u> <u>hectare</u>	<u>Mortality</u> <u>in % after 2 days</u>
II-1-54	0.16	0
II-1-52	0.16	17
II-1-1	0.8	67
II-1-12	0.8	67
(Im) Clothianidin	0.16	0
II-1-54 + (Im) Clothianidin (1 : 1) according to the invention	0.16 + 0.16	<u>obs.*</u> <u>cal.**</u> 33            0
(Ia) Imidacloprid	20	33
	0.16	0

<b>II-1-54 + (Ia) Imidacloprid (1 : 1)</b> according to the invention	<b>0.16 + 0.16</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>33</b>	<b>0</b>
<b>II-1-52 + (Ia) Imidacloprid (1 : 1)</b> according to the invention	<b>0.16 + 0.16</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>50</b>	<b>17</b>
<b>II-1-12 + (Ia) Imidacloprid (1 : 25)</b> according to the invention	<b>0.8 + 20</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>100</b>	<b>77.89</b>
(Ik)Thiacloprid	20 0.16	33 0	
<b>II-1-54 + (Ik)Thiacloprid (1 : 1)</b> according to the invention	<b>0.16 + 0.16</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>50</b>	<b>0</b>
<b>II-1-52 + (Ik)Thiacloprid (1 : 1)</b> according to the invention	<b>0.16 + 0.16</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>83</b>	<b>17</b>
<b>II-1-1 + (Ik)Thiacloprid (1 : 25)</b> according to the invention	<b>0.8 + 20</b>	<u>obs.*</u>	<u>cal.**</u>
		<b>100</b>	<b>77.89</b>

Example C

**Spodoptera frugiperda - test (spray application)**

Solvent:      78    parts by weight of acetone  
                1.5   parts by weight of dimethylformamide

Emulsifier:    0.5   parts by weight of alkylaryl polyglykolether

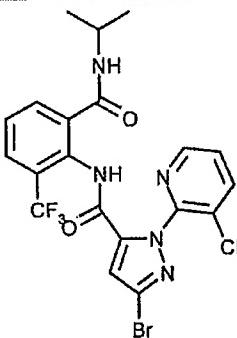
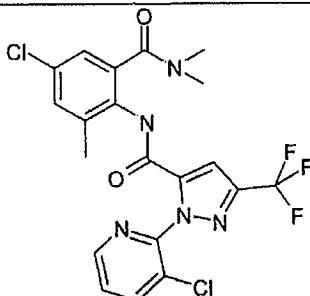
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

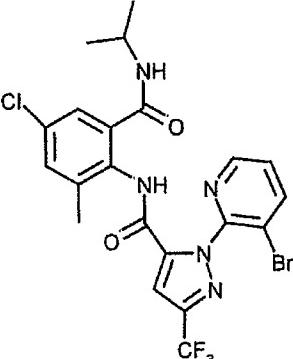
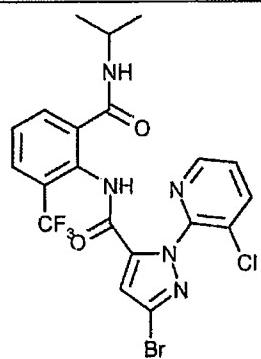
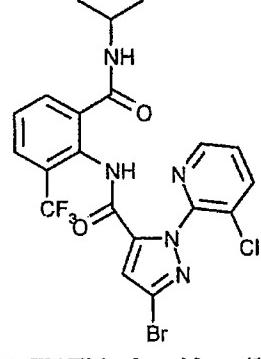
Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the fall army worm (*Spodoptera frugiperda*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. A mortality of 100% means that all the caterpillars have been killed; a mortality of 0% means that none of the caterpillars have been killed.

According to the results presented in Tables C1-C4, the following combinations show a synergistic effect in comparison to the single compounds:

Table C1: Spodoptera frugiperda – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 2 days</u>
	4	0
	4	50

	4	83
(Ia) Imidacloprid	100	33
(Ik) Thiacloprid	100	0
 + (Ia) Imidacloprid (1 : 25) according to the invention	4 + 100	<u>obs.*</u> <u>cal.**</u> 50            33
 + (Ik) Thiacloprid (1 : 25) according to the invention	4 + 100	<u>obs.*</u> <u>cal.**</u> 17            0

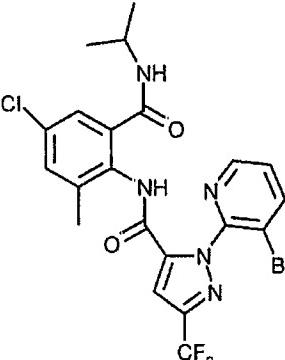
 + (Ik)Thiacloprid (1 : 25) according to the invention	4 + 100	<u>obs.*</u> <u>83</u> <u>cal.**</u> <u>50</u>
 + (Ik)Thiacloprid (1 : 25) according to the invention	4 + 100	<u>obs.*</u> <u>100</u> <u>cal.**</u> <u>83</u>

Table C2: Spodoptera frugiperda – test

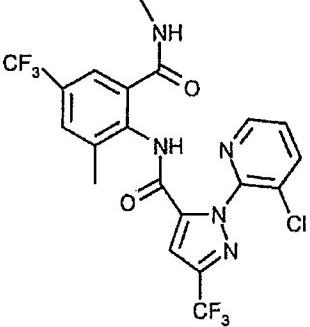
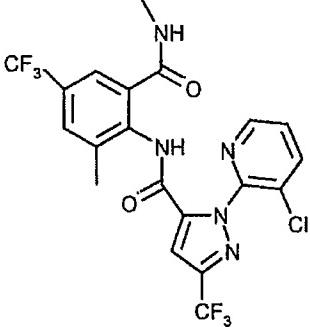
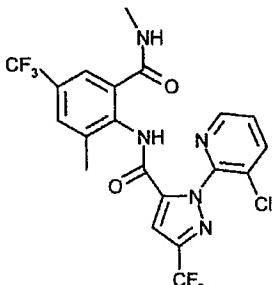
<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 6 days</u>
	0.16	33
II-1-2	0.032	50
(Im) Clothianidin	4	0
	0.8	0
(Ia) Imidacloprid	4	0
	0.16 + 4	<u>obs.*</u> <u>cal.**</u> 50            33
+ (Im) Clothianidin (1 : 25) according to the invention		
II-1-2 + (Im) Clothianidin (1 : 25) according to the invention	0.032 + 0.8	<u>obs.*</u> <u>cal.**</u> 83            50
	0.16 + 4	<u>obs.*</u> <u>cal.**</u> 50            33
+ (Ia) Imidacloprid (1 : 25) according to the invention		

Table C3: Spodoptera frugiperda – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 2 days</u>
II-1-54	0.16	0
II-1-52	0.16	17
II-1-1	0.16	50
II-1-12	0.16	17
(Im) Clothianidin	0.16	0
II-1-54 + (Im) Clothianidin (1 : 1) according to the invention	<u>0.16 + 0.16</u> <u>33</u>	<u>obs.*</u> <u>cal.**</u> <u>0</u>
II-1-52 + (Im) Clothianidin (1 : 1) according to the invention	<u>0.16 + 0.16</u> <u>50</u>	<u>obs.*</u> <u>cal.**</u> <u>17</u>
II-1-1 + (Im) Clothianidin (1 : 1) according to the invention	<u>0.16 + 0.16</u> <u>67</u>	<u>obs.*</u> <u>cal.**</u> <u>50</u>
(Ia) Imidacloprid	4 0.16	0 0
II-1-54 + (Ia) Imidacloprid (1 : 1) according to the invention	<u>0.16 + 0.16</u> <u>33</u>	<u>obs.*</u> <u>cal.**</u> <u>0</u>
II-1-12 + (Ia) Imidacloprid (1 : 25) according to the invention	<u>0.16 + 4</u> <u>33</u>	<u>obs.*</u> <u>cal.**</u> <u>17</u>
(Ik) Thiadiazole	0.16	0
II-1-1 + (Ik) Thiadiazole (1 : 1) according to the invention	<u>0.16 + 0.16</u> <u>83</u>	<u>obs.*</u> <u>cal.**</u> <u>50</u>

\* obs. = observed insecticidal efficacy

\*\* cal. = efficacy calculated with Colby-formula

Table C4: Spodoptera frugiperda – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per</u> <u>hectare</u>	<u>Mortality</u> <u>in % after 6 days</u>
II-1-54	0.16	17
II-1-52	0.16	33
II-1-1	0.16 0.032	67 33

<b>II-1-24</b>	0.16	50
<b>II-1-12</b>	0.16 0.0064	83 0
<b>(Im) Clothianidin</b>	4 0.8 0.16 0.0064	0 0 0 0
<b>II-1-54 + (Im) Clothiandin (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>33</u> <u>17</u>
<b>II-1-1 + (Im) Clothiandin (1 : 25) according to the invention</b>	<b>0.032 + 0.8</b>	<u>obs.*</u> <u>cal.**</u> <u>67</u> <u>33</u>
<b>II-1-12 + (Im) Clothiandin (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>100</u> <u>83</u>
<b>II-1-12 + (Im) Clothiandin (1 : 1) according to the invention</b>	<b>0.0064 + 0.0064</b>	<u>obs.*</u> <u>cal.**</u> <u>33</u> <u>0</u>
<b>(Ia) Imidacloprid</b>	4	0
<b>II-1-52 + (Ia) Imidacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>83</u> <u>33</u>
<b>II-1-1 + (Ia) Imidacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>100</u> <u>67</u>
<b>II-1-24 + (Ia) Imidacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>100</u> <u>50</u>
<b>(Ik)Thiacloprid</b>	4	0
<b>II-1-54 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>67</u> <u>17</u>
<b>II-1-52 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>67</u> <u>33</u>
<b>II-1-1 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>100</u> <u>67</u>
<b>II-1-24 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>83</u> <u>50</u>
<b>II-1-12 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>100</u> <u>83</u>
<b>II-1-4 + (Ik)Thiacloprid (1 : 25) according to the invention</b>	<b>0.16 + 4</b>	<u>obs.*</u> <u>cal.**</u> <u>83</u> <u>67</u>

Example D

**Tetranychus urticae - test (OP-resistant/dip test)**

Solvent:            78    parts by weight of acetone  
                      1.5    parts by weight of dimethylformamide

Emulsifier:        0.5    parts by weight of alkylaryl polyglykolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Bean plants (*Phaseolus vulgaris*) which are heavily infested with all stages of the two-spotted spider mite (*Tetranychus urticae*) are treated by being sprayed with the preparation of the active compound at the desired concentration.

After the specified period of time, mortality in % is determined. A mortality of 100% means that all the spider mites have been killed; a mortality of 0% means that none of the spider mites have been killed.

According to the results presented in Tables D1-D2 the following combinations showed a synergistic effect in comparison to the single compounds:

Table D1: **Tetranychus urticae (OP-resistant) – Test**

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 2 days</u>
II-1-54	100	20
II-1-52	100	20
II-1-24	100	0
II-1-4	100	0
(Im) Clothianidin	10	0
II-1-54 + (Im) Clothiandin (10 : 1) according to the invention	100 + 10	<u>obs.*</u> <u>cal.**</u> 50            20
II-1-52 + (Im) Clothiandin (10 : 1) according to the invention	100 + 10	<u>obs.*</u> <u>cal.**</u> 70            20
II-1-24 + (Im) Clothiandin (10 : 1) according to the invention	100 + 10	<u>obs.*</u> <u>cal.**</u> 80            0

<b>II-1-4 + (Im) Clothianidin (10 : 1)</b> according to the invention	<b>100 + 10</b>	<u>obs.*</u> <u>cal.**</u> <u>40</u> <u>0</u>
<b>(Ia) Imidacloprid</b>	<b>10</b>	<b>0</b>
<b>II-1-52 + (Ia) Imidacloprid (10 : 1)</b> according to the invention	<b>100 + 10</b>	<u>obs.*</u> <u>cal.**</u> <u>50</u> <u>20</u>
<b>(Ik) Thiocloprid</b>	<b>10</b>	<b>0</b>
<b>II-1-52 + (Ik) Thiocloprid (10 : 1)</b> according to the invention	<b>100 + 10</b>	<u>obs.*</u> <u>cal.**</u> <u>40</u> <u>20</u>

\* obs. = observed insecticidal efficacy

\*\* cal. = efficacy calculated with Colby-formula

Table D2: *Tetranychus urticae* (OP-resistant) – Test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in grams per hectare</u>	<u>Mortality</u> <u>in % after 6 days</u>
<b>II-1-54</b>	<b>20</b>	<b>0</b>
<b>(Im) Clothianidin</b>	<b>2</b>	<b>0</b>
<b>II-1-54 + (Im) Clothianidin (10 : 1)</b> according to the invention	<b>20 + 2</b>	<u>obs.*</u> <u>cal.**</u> <u>40</u> <u>0</u>
<b>(Ik) Thiocloprid</b>	<b>2</b>	<b>0</b>
<b>II-1-54 + (Ik) Thiocloprid (10 : 1)</b> according to the invention	<b>20 + 2</b>	<u>obs.*</u> <u>cal.**</u> <u>60</u> <u>0</u>

\* obs. = observed insecticidal efficacy

\*\* cal. = efficacy calculated with Colby-formula

The undersigned declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Monheim, Germany,

Date 26/10/2009



Dr. Wolfram Andersch

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